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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,414	04/15/2005	Ronny Losfeld	016782-0324	7979
22428 7590 01/24/2008 FOLEY AND LARDNER LLP SUITE 500 3000 K STREET NW WASHINGTON, DC 20007			EXAMINER SAVAGE, JASON L	
			ART UNIT 1794	PAPER NUMBER
			MAIL DATE 01/24/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/531,414	Applicant(s) LOSFELD ET AL.	
	Examiner Jason L. Savage	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-20 is/are pending in the application.
- 4a) Of the above claim(s) 17, 19 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-4, 6-16 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/ are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Election/Restrictions

Newly submitted claims 17 and 19-20 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

Invention of claims 1-4, 6-16 and 18 and claims 17 and 19-20 are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination of a stack of different metal fiber fleeces and method of sintering each of these fiber fleeces prior to sintering of the composite layer structure provides a distinct structure and/or method. The subcombination has separate utility such as filter having only a single metal fiber fleece.

The examiner has required restriction between combination and subcombination inventions. Where applicant elects a subcombination, and claims thereto are subsequently found allowable, any claim(s) depending from or otherwise requiring all the limitations of the allowable subcombination will be examined for patentability in accordance with 37 CFR 1.104. See MPEP § 821.04(a). Applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 17 and 19-20 have been withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-4, 7-16 and 18 are rejected under 35 U.S.C. 103(a) as obvious over Vanhoutte (WO 02/083267 using US equivalent 2004/0129649).

Vanhoutte teaches forming a composite layered filter structure which may comprise a first porous metal non-woven fiber fleece sintered to a second reinforcing layer ([par 0012]). Vanhoutte further teaches the non-woven metal fiber fleece may comprise fibers of all lengths including long metal fibers (par[0017]). Vanhoutte also teaches that a layer of short metal fibers may be deposited on the non-woven metal fiber fleece by any way known in the art and subsequently sintering (par[0022]).

Vanhoutte is silent to the layer of short metal fibers being a self-supporting layer; however the claims are drawn to an article, not the method of making. Absent a teaching of the criticality or showing of unexpected results of the short metal fiber containing layer being self-supporting prior to sintering, it would not provide a patentable distinction over the prior art. Furthermore, Vanhoutte teaches the short metal fiber

containing layer by be deposited by any way known in the art. It would have been within the purview of one of ordinary skill in the art to have recognized that a self-supporting perform layer of the short fibers could be formed and applied to the non-woven metal fiber fleece layer with a reasonable expectation of success. In addition, Vanhoutte teaches that the reinforcing layer may comprise a porous metal sheet which would be a self supporting layer (par[0024]). It would have been obvious to one of ordinary skill in the art to have provided a reinforcing metal layer sheet consisting of short metal fibers since a layer formed of short metal fibers is known to exhibit increased bending strength and porosity.

As evidence that this is known, Morimoto teaches forming a layered composite structure for use as a filter which may comprise a plurality of porous layers superposed and sintered together (col. 4, ln. 21-31). Morimoto further teaches that forming a porous metal plate sheet comprising sintered short metal fibers exhibits increased bending strength and porosity (col. 1, ln. 53-57).

Regarding claim 2, although the references are silent to the maximum roughness depth as defined by the R_t value such as is described on p.4, lines 4-7 of the specification from Priority Document PCT/EP03/50691, it is the position of the Examiner that the composite formed by the prior art would meet the claim limitation due to the use of the same materials including short fibers such as is claimed. In the alternative, if there is a difference, absent evidence to the contrary it would be considered minor and obvious. The Patent and Trademark Office can require Applicant to prove that prior art products do not necessarily or inherently possess characteristics of claimed products

where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on Applicants where rejection based on inherency under 35 U.S.C. § 102 or on prima facie obviousness under 35 U.S.C. § 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 U.S.P.Q. 431 (CCPA 1977).

Regarding claim 3, the short fibers in the prior art would meet the limitation of being randomly oriented since the reference is silent to orienting the fibers.

Regarding claim 4, although the references do not explicitly recite that the first layer comprising a non-woven metal fiber fleece is sintered prior to the first and second layers are sintered together, the claims are drawn to an article, not the method of making. The claimed sintered composite of Vanhoutte differ from the structure claimed by Applicant which subjects the first layer to two sintering steps.

Regarding claim 7, Vanhoutte teaches the first fiber fleece layer may comprise long, short and mixtures thereof (par[0017]).

Regarding claim 8, the first fiber fleece layer of Vanhoutte is supported by a reinforcing layer. Furthermore, the fiber fleece layer may include another support layer such as a mesh material (par [0023]).

Regarding claim 9, although Vanhoutte does not exemplify an embodiment wherein the second layer consists of short metal fibers and one or more of long metal fibers and metal powder particles, it teaches the metal fibers may comprise metal fibers

of all lengths including mixtures of long and short metal fibers (par[0017]). It would have been obvious to have included a mixture of long and short metal fibers for the second, reinforcing layer of Vanhoutte since such a mixture of fibers is taught as being suitable for use in the composite filter.

Regarding claim 10, the reference is silent to the ratio of short metal fibers and long metal fibers. However since Vanhoutte teaches the use of mixtures of both long and short metal fibers, it would have been within the purview of one of ordinary skill to have provided any ratio of short fibers to long fibers with a reasonable expectation of success. Absent a teaching of the criticality or showing of unexpected results from the claimed mixture ratios, it would not provide a patentable distinction over the prior art.

Regarding claims 11 and 12, Vanhoutte teaches the open area porosity of the formed layers may be between 50-85+% (par[0028]).

Regarding claim 13, as described above, Vanhoutte teaches a method of providing a first porous metal layer, providing a self-supporting porous metal layer and bringing said first and second layer in contact with each other to form a layered structure which is subsequently sintered (par[0022-0024]). As recited above, it would have been obvious to one of ordinary skill in the art to have provided a reinforcing metal layer sheet consisting of short metal fibers since a layer formed of short metal fibers is known to exhibit increased bending strength and porosity.

Regarding claims 14-15, the composite filter of Vanhoutte may be used for filtration the surface of a medium such as liquids(par[0048-0058]).

Regarding claim 16, Vanhoutte teaches the L/D ratio for the short metal fibers may vary from 10-100 (par[0017]). Implicit in this disclosure is that the long metal fibers would inevitably have a L/D ratio of greater than 100 which would meet the claim limitation.

Regarding claim 18, Vanhoutte teaches the metal material used in the different layers may be the same (par[0035]).

Claims 6 and 9-10 are rejected under 35 U.S.C. 103(a) as obvious over Vanhoutte (WO 02/083267 using US equivalent 2004/0129649) as applied to claims 1-4, 7-16 and 18 above, further in view of Morimoto (US 4,729,871).

Regarding claims 6, Vanhoutte is silent to the first fiber fleece layer comprising metal powder particles. However, Vanhoutte teaches that the fleece first layer may comprising a mixture of long and short metal fibers (par[0017]). As evidenced by Morimoto, powdery substances including metal powders and metal short fibers can be used alone or as a mixture for the porous material layers (col. 5, ln. 53-65). As such, it would have been obvious to one of ordinary skill in the art at the time of the invention to have used a mixture of materials including powder particles in the first fiber fleece layer with a reasonable expectation of success.

Regarding claims 9-10, Vanhoutte does not exemplify an embodiment wherein the second layer consists of short metal fibers and one or more of long metal fibers and metal powder particles. However, Morimoto teaches that powdery substances including metal powders and metal short fibers can be used alone or as a mixture to form the

porous material layers exhibiting enhanced bending strength and porosity (col. 5, ln. 53-65). As such, it would have been obvious to have included a mixture of short metal fibers and metal powder particles for the second, porous reinforcing layer of Vanhoutte with a reasonable expectation of success of forming a filter having enhanced bending strength and porosity in the reinforcing layer.

Prior Art Made of Record

The following is a listing of prior art made of record that is also considered pertinent to the present Application:

Ishibe (US 6,355,082) teaches forming a composite layered filter structure which may comprise a sintered porous filtering layer and a sintered porous supporting layer (col. 2, ln. 35-65). Ishibe further teaches that the a porous layer may formed from metal short fibers having an aspect ratio which provides large interlocking of the short fibers so that a self-supporting layer can be formed without the need for a binder (col. 5, ln. 53 - col. 6, ln. 16).

Response to Arguments

Applicant's arguments with respect to claims 1-4 and 6-20 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argues that Morimoto describes a process for preparing a porous metal plate by applying an adhesive on a substrate and embedding short metal fibers in said adhesive to form a composite which would not meet the present claim limitations

reciting the second layer consists of short metal fibers or a mixture of short metal fibers with long metal fibers or powder metal particles. However, Vanhoutte does not teach the use of adhesive and would meet the limitation that the second layer consist of short metal fibers or mixtures of metal material with short metal fibers.

Applicant argues that neither Morimoto nor Vaughn teach or suggest a non-woven metal fiber fleece. However, Vanhoutte discloses a first layer comprising a non-woven metal fiber fleece.

Regarding the rejection of claims in view of other combinations of the prior art, these arguments are moot in view of the new grounds of rejection set forth above.

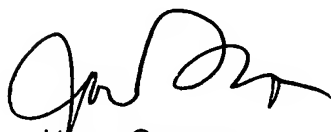
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason L. Savage whose telephone number is 571-272-1542. The examiner can normally be reached on M-F 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on 571-272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Jason Savage
1-22-08



Jennifer Mullet
Primary Examiner
1794